Generation of long-term cultures of human hematopoietic multipotent progenitors from embryonic stem cells

Grant Award Details

Generation of long-term cultures of human hematopoietic multipotent progenitors from embryonic stem cells

Grant Type: SEED Grant

Grant Number: RS1-00280

Investigator:

Name:	Cornelis Murre
Institution:	University of California, San Diego
Type:	PI

Disease Focus: Blood Disorders

Human Stem Cell Use: Embryonic Stem Cell

Award Value: $473,952

Status: Closed

Progress Reports

Reporting Period: Year 2

View Report

Grant Application Details

Application Title: Generation of long-term cultures of human hematopoietic multipotent progenitors from embryonic stem cells

Public Abstract:	For many therapeutic reasons it is important to have available large numbers of blood cells. However, it is difficult to generate large numbers of specialized blood cells that have the ability to neutralize autoimmunity and response to tumor cell growth. In this study we would develop a technique that would allow the production of large numbers of different types of blood cells from human embryonic stem cells. For example, a subset of white blood cells, called dendrititc cells, is currently manipulated in the laboratory in a manner that allows them to attack cancer cells. The same cells also are altered in the laboratory to counter-act the development of autoimmune diseases. A problem with these experiments is that it is difficult to isolate large numbers of these cells, since they are relatively rare. With the technology that is described in this grant application we would be able to generate large numbers of such cells in the laboratory using as a starting point, human embryonic stem cells.
Statement of Benefit to California:	In this study we would develop an approach that would allow the production of large numbers of different types of blood cells from human embryonic stem cells. For example, a subset of white blood cells, called dendrititc cells, is currently manipulated in the laboratory in a manner that allows them to attack cancer cells. The same cells also are altered in the laboratory to counter-act the development of autoimmune diseases. A problem with these experiments is that it is difficult to isolate large numbers of these cells, since they are relatively rare. With the technology that is described in this grant application we would be able to generate large numbers of such cells in the laboratory using as a starting point, human embryonic stem cells. The approach is novel and straightforward and could be applied immediately once it has been established.